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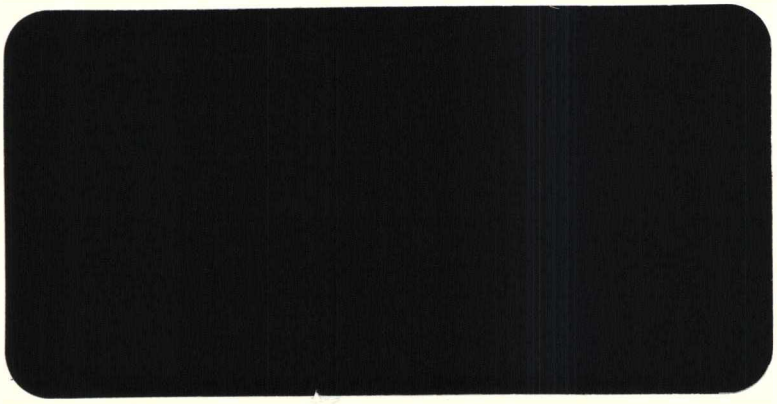

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U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ENFORCEMENT SUPPORT
AT
HAZARDOUS WASTE SITES

TES IV
CONTRACT #68-01-7351
WORK ASSIGNMENT NO. 389

17a
WA 2917
1-29-88

# REVIEW OF RCRA CLOSURE/POST-CLOSURE PLAN, CONTINGENCY PLAN, AND WASTE ANALYSIS PLAN CHEMICAL PROCESSORS, INC., PIER 91 SEATTLE, WASHINGTON

DRAFT

TETRA TECH, INC.
FOR
JACOBS ENGINEERING GROUP, INC.
PROJECT NUMBER: 05-B389-00
TC-3620-78-08

29 JANUARY 1988

CONTENTS

Need to identify date of plans reviewed

## INTRODUCTION

Tetra Tech, Inc., as a subcontractor to Jacobs Engineering Group, Inc. was requested by the U.S. Environmental Protection Agency (U.S. EPA) to provide technical support in reviewing the Resource Conservation and Recovery Act (RCRA) closure/post-closure, contingency, and waste analysis plans for Chemical Processors, Inc. (Chempro) Pier 91 facilities located in Seattle, WA. The three plans submitted to the U.S. EPA by Chempro provide the information required to evaluate the proposed closure activities. This review includes an evaluation of both the regulatory and technical aspects each of these plans.

The purpose of this review is to determine whether the plans comply with regulations set forth in 40 CFR Part 265 on interim status standards for an owner/operator of hazardous waste treatment, storage, and disposal facilities. Guidance for evaluating compliance with RCRA regulations is provided in 40 CFR Parts 199 to 399 (July 1986) and the RCRA Guidance Manual [Subpart G: Closure and Post-Closure Care Standards and Subpart H: Cost Estimating Requirements (ICF Corporation 1987)]. U.S. EPA Region X also provided two checklists that are used for rapid evaluation of the required elements of the closure and waste analysis plans. These completed checklists are included in Appendices A and B. Technical aspects of the closure plan were evaluated to determine whether adequate practices were incorporated into the design of the proposed closure activities.

This review document provides background information and a brief facility description. The summary of conclusions section provides a synopsis of Tetra Tech's review of each plan. A discussion of the applicable regulations is presented at the beginning of each plan review. Regulatory and technical comments are then provided for the closure plan, contingency plan, and waste analysis plan.

## BACKGROUND

Chemical Processors, Inc. (Chempro) operate a waste oil treatment and recovery facility at Pier 91, located on the northern waterfront of Elliott Bay. The facility was originally owned and operated by Texaco, Inc. in the 1920s. Texaco transferred ownership to the U.S. Navy during World War II and the City of Seattle operated the facility. In 1971, the City of Seattle leased the facility to Chempro (Chempro 1987a). Pacific Northern Oil currently leases approximately 60 percent of the Pier 91 treatment and storage complex for use as a marine fuel depot (Chempro 1987b). All oil recovered by Chempro at Pier 91 is sold to Pacific Northern Oil.

The process system at Chempro recovers oil from wastes (e.g., sludges, emulsified oil and water, oily water). The system treats low concentration hazardous wastes such as heavy metals and phenols. The waste types treated include:

- Dirty bilge water
- Pretreated oily wastes from other Chempro facilities
- Oily industrial wastewater, not otherwise specified (NOS)
- Industrial coolants from local firms.

Chempro's treatment and storage facilities at Pier 91 have a maximum capacity of approximately 8.5 million gal. Waste materials are delivered to the Chempro facilities via barges and tank trucks. The treatment and recovery processes involve oil/water separation, thermal and chemical oxidation, and centrifugation (oily sludges).

SUMMARY OF CONCLUSIONS

The Chempro closure, contingency, and waste analysis plans have some significant regulatory deficiencies and minor technical problems. A summary of conclusions for each plan is presented below.

Closure Plan

The regulatory deficiencies of the Chempro closure plan at the Pier 91 facility include:

- Inadequate definition and detail of the facility closure schedule, such as procedures for closure notification and certification, techniques to be used for closing individual waste management units, and methods for determining decontamination efficiency

- Omission of procedures to modify the cost estimates to reflect inflationary increases

- Exclusion of the required financial assurance and liability information.

The technical aspects of the Chempro closure plan generally do not include sufficient detail to determine whether the proposed approach is adequate for clean-closure. The following specific topics need to be presented in greater detail or clarified:

- The facility description including site-specific geology and hydrogeology

- The closure schedule and methods relating to removing residual product and waste from tanks and appurtenant equipment

- The rationale for excluding analysis of organic compounds from decontamination rinsate and soil samples

- The decontamination and soil sampling procedures including sample preparation and handling.

Contingency Plan

The Chempro contingency plan generally complies with all requirements set forth under 40 CFR Part 265, Subpart D. However, there are several minor omissions. The deficiencies include:

- Description of onsite decontamination equipment

- Provisions for contingency plan amendment and modification

- Definition of the qualifications for each proposed emergency coordinator.

The technical details of the contingency plan are generally adequate. However, several of the sections did not fully explain emergency response notification procedures or criteria used to determine implementation of the contingency plans. This information should be included in the plan.

Waste Analysis Plan

The Chempro waste analysis plan generally complies with the RCRA requirements specified under 40 CFR Part 265. However, the plan fails to adequately describe the QA/QC procedures for waste sampling and analysis. This information should be provided in the plan.

The technical details provided in the Chempro waste analysis plan are well designed and should allow for the efficient management and tracking of wastes through the system. The only noted problem in the plan is the inconsistency in defining the maximum operational capacity of the Pier 91

facility. This capacity is listed as both 3.5 and 8.5 million gal. This inconsistency needs to be clarified.

CLOSURE/POST-CLOSURE PLAN REVIEW

Applicable Regulations

Chempro, as a RCRA hazardous waste treatment facility operator, is required to prepare and submit closure/post-closure plans in accordance with guidelines set forth under 40 CFR Part 265, Subpart G. The following items must be included in the closure plan:

- Facility description
- Partial closure activities
- Final closure activities (based on the maximum extent of operations)
- Facility decontamination
- Closure certification
- Partial and final closure schedule.

In addition the facility owner (Chempro) is also required to provide written cost estimates, in current dollars, for all proposed closure/post-closure care activities. These regulations are set forth under 40 CFR Part 265, Subpart H. The following key activities must be included in the cost estimates:

- Inventory management (defined at the maximum operation extent)
- Monitoring activities

- Maintenance of security
- Survey plats
- Closure/post-closure certification.

However, Chempro is proposing a clean-closure of the Pier 91 facility, cost estimates for post-closure care activities are not required.

Regulatory Comments

The U.S. EPA (1986) guidance document provided a checklist to use as the basis of this evaluation. The completed checklist is included in this report as Appendix A.

Chempro's closure/post-closure plan does not comply with RCRA guidelines and requirements for closure plans. Tetra Tech performed a compliance check and evaluation according to RCRA guidelines and the U.S. EPA (1986) checklist. Several requirements were omitted. These deficiencies are discussed below, with reference to the specific checklist section number (e.g., I-A-2b.).

Section I: General Closure Requirements (p. 3-1)--

I-A-2b.--The discussion of decontamination procedures only includes analyses for possible heavy metal contaminants in the rinsate samples. Many of the onsite storage areas (tanks) and process systems have also been subjected to hazardous organic compounds (phenols, petroleum distillates). To establish decontamination effectiveness, rinsate sample analyses should also include a suite of organic compounds. The proposed decontamination procedures also fail to specify the fate of the decontamination rinsate [40 CFR 265.112(b)(4)].

I-A-2d.--The closure of the different units (i.e., process, storage, and disposal) are not described in sufficient detail to allow for proper

evaluation. Because the nature of the different units vary, closure procedures should be described with respect to the type and characteristics of the hazardous material involved. The proposed closure schedule is too general to track closure activities [40 CFR 265.112(b)(6) and (7)].

I-A-4.--The closure plan does not specify the schedule or procedure required to notify the appropriate agencies of final closure activities for each unit [40 CFR 265.112(d)].

I-D.--The procedure or schedule for closure certification is not discussed in the closure plan. However, the cost of certification is presented. The plan should specify the criteria used to estimate certification costs (40 CFR 265.116).

I-G-1.--The cost estimates do not reflect the required adjustment to account for inflationary increases. The closure plan must specify the procedure used to amend the proposed cost estimates [40 CFR 265.142(b)].

Subpart H.

closure plan doesn't need to include cost estimates

I-H.--The closure plan does not provide the required financial assurance information (40 CFR 265.143).

I-I.--The closure plan does not provide the required liability information (40 CFR 265.147).

Section IV: Closure of Tanks (p. 3-6)--

IV-A-1.--The closure plan does not provide a description of how each type of unit will be decontaminated and subsequently closed. The plan should provide a statement of whether the proposed general decontamination procedures is adequate to remove all species of potential contaminants [40 CFR 265.112(b)(1)].

IV-A-6.--The closure plan does not provide the proposed method of removing existing and residual product or untreated waste from tanks and

appurtenant lines. The closure plan is required to provide these procedures [40 CFR 265.112(b)(4), 265.114, and 265.197].

IV-A-8.--A detailed closure schedule of the individual treatment and storage tanks is not provided. This schedule must be included in the general facility closure plan [40 CFR 265.112(b)(6)].

IV-B-2.--The proposed plan does not address the decontamination and subsequent waste management of the centrifuge and appurtenant equipment (40 CFR 265.114, 265.197).

IV-B-3.--The closure plan does not provide a description of the decontamination rinsate sampling or analytical methods proposed to determine the decontamination effectiveness. In conjunction with this requirement, the plan also does not define the criteria (contaminant concentration) to be used to determine whether the decontamination objectives have been met. As mentioned earlier in the general comments, the closure plan does not present the rationale for only performing analyses for heavy metals. A suite of organic compounds should be included in the decontamination rinsate analyses [40 CFR 265.112(b)(4), 265.197].

IV-B-4.--The specific criteria used to determine the extent of required decontamination is not presented in the closure plan. These criteria should be provided for evaluation prior to allowing the startup of decontamination activities [40 CFR 265.112(b)(4)].

Technical Comments

The overall technical details of Chempro closure plan are too general to determine whether the approach is adequate for clean-closure. In particular, the closure schedule, decontamination plan, and sampling procedures do not provide enough specific information to evaluate technical merit. Specific technical comments for each section of the closure plan are presented below.

not required for clean closure.

Facility Description--

The closure plan does not present any geologic or hydrogeologic information about the facility site. The closure plan should have a detailed description of the local subsurface geology. This information is essential for planning soil sampling and for determining the proper horizontal and vertical placement of monitoring wells. This geologic information is also needed to determine and evaluate the potential contaminant migration pathways. This information must be provided before a groundwater monitoring system can be installed.

The closure plan should define all criteria for wastewater discharge. The criteria for flow, oil and grease, and pH are given on page 5 of the closure plan (Chempro 1987a). However, equivalent information regarding the species and allowable concentrations of dissolved metals and sulfides is not given.

The facility description summary states that:

". . .daily, weekly, and monthly inspections will be performed wherever necessary."

The schedule and criteria for these inspections must be defined in the closure plans. Specific information such as inspection personnel, records, and data to be collected during the inspections, needs to be presented in the closure plan.

Closure Schedule--

The wastewater treatment procedures and analytical criteria used to determine water quality objectives prior to discharge into the city sewer system should be defined. The closure plan should provide a statement that the closure activities will not adversely affect sewer discharge water quality.

The disposal of the decontamination rinsate is never discussed. The closure plan implies that the rinsate will test negative for significant contamination. However, there is no contingency plan for disposal of contaminated rinsate. Also, the proposed rinsate tests include analysis for lead, nickel, copper, and cadmium. These metals are not mentioned elsewhere in the closure plan. If these metals are present throughout the facility, they should be specified in the soil sampling and groundwater monitoring plans. The closure plan should consider the potential of organic compounds in the decontamination rinsate.

The closure plan schedule does not specify which Class I disposal site will be used for waste disposal. An estimated storage time is required for drums that contain sludge and other hazardous waste. Also, the onsite storage location for these drums must be defined.

Treatment Process Description--

The description of Chempro's treatment and recovery operations as presented in the closure plan, are extremely brief and do not provide specific information. A description of the chemicals used in the waste treatment process is not given. The thermal treatment technique is not described. All chemicals used onsite as well as the potential hazardous by-products generated during treatment and recovery should be identified in the closure plan. Identification of all hazardous process materials would aid in the evaluation of proposed monitoring and analytical procedures.

Waste Disposal and Disposal Procedures for Specific Wastes--

This section only presents disposal procedures for the generic waste types that are accepted for treatment at the facility. Identification of process chemicals or process-derived by-products is not provided. The description of disposal procedures is too general for adequate evaluation. This section should include specific information such as identification of process chemicals and final temperature and residence time of wastes during thermal treatment.

Closure Cost Estimates--

The estimated closure costs should not include the resale value of the recovered or treated product [40 CFR 265.142(a)(3)]. Therefore, the total estimated closure cost as indicated on page 13 (Chempro 1987a) should be $512,274.

There are two discrepancies in the calculation of closure costs as presented on pages 13 and 14 of the closure plan. The estimated cost for transportation varies by $200 on these two pages. The treatment costs, as presented on page 14, adds up to $100,108, not $118,796 as reported on page 13. Also, the subtotals on page 14 for the treatment costs are incorrect as presented.

The closure cost estimates do not give any provision for disposal of the decontamination rinsate. These costs should be included as a contingency item.

Decontamination Procedures--

The discussion of the proposed decontamination procedures is too brief and general. There is not sufficient detail to evaluate each step required for facility decontamination. The rationale for assuming that the liquid residue (rinsate) will be nonhazardous is not given. The plan does not address the possibility of generating potentially hazardous sludge during decontamination. The decontamination procedures section must include a discussion of the following specific information: decontamination certification, source of decontamination water, rationale for determining only heavy metal content, and contingency plan for disposing of hazardous rinsate.

Summary of Soil Sampling--

The information presented for the proposed soil sampling is inadequate to properly evaluate the plan. Information such as depth of soil samples, whether the samples will be composited, and specific analyses should be provided in this plan.

Because Chempro has not defined the hydrogeologic setting, the number and placement of groundwater monitoring wells can not be determined. A groundwater monitoring system should not be installed without site-specific hydrogeologic information.

not required

The plan does not present any contingency actions should hazardous waste be detected in soil.

Cost Estimates for Sampling and Analysis--

The cost estimate for performing the proposed soil sampling appears to be appropriate. However, the costs for installing a groundwater monitoring system are not included. The cost estimate for the analytical laboratory appears to be high for the analysis of a small suite of heavy metals. If this cost estimate also includes analyses of a suite of organic compounds, the cost is appropriate. The closure plan should specify which analytes are included in this estimate.

Sampling Plan--

The plan does not define how many of the 20 samples will be from the random grid sampling and how many will be from authoritative sampling. The proposed sampling plan is restrictive by limiting the total number of soil samples. A provision should be made to allow for additional sample collection if necessary. Procedures for sample handling such as preparation and shipping are not presented in the closure plan.

## CONTINGENCY PLAN REVIEW

### Applicable Regulations

Chempro has also submitted a contingency plan for review. The regulations for contingency plan format and content are set forth under 40 CFR Part 265, Subpart D. The proposed contingency plan must include the following elements:

- Description of facility personnel actions in case of an emergency
- Description of arrangements agreed upon by local emergency response teams
- List of key facility personnel (i.e., names, addresses, and phone numbers) who are qualified to act as the designated emergency coordinator
- List of all emergency equipment at the facility
- Description of facility emergency evacuation plan for all onsite personnel.

### Regulatory Comments

The Chempro contingency plan (Chempro 1987b) generally complies with all of the RCRA requirements set forth under 40 CFR Part 265 Subpart D. Tetra Tech performed the contingency plan review and found minor omissions in the plan. A brief discussion of each of these omissions is presented below.

The plan does not list any onsite decontamination equipment. This equipment is required under 40 CFR 265.52(e). All other required safety equipment is listed as directed at Chempro Pier 91.

The contingency plan does not make provisions for plan amendment as required by 40 CFR 265.54. The contingency plan needs to be revised if any of the following events occur:

- The facility permit is revised
- The facility changes design or operation such that the potential for fire, explosions, or releases of hazardous wastes increases
- The list of emergency coordinates changes
- The list of emergency equipment changes.

The contingency plan needs to include a mechanism to amend the plan in a timely fashion.

The list of potential emergency coordinators does not include the qualifications of each person. RCRA regulations 40 CFR 265.55 require that the emergency coordinator must be thoroughly familiar with the facility.

Technical Comments

The technical details of Chempro's contingency plan (Chempro 1987b) are generally adequate. Tetra Tech's review revealed no major problems with the technical approach. However, several of the sections did not fully explain the emergency procedures or clearly define the contingency approach to be implemented. The comments presented below should be addressed to help elucidate the specific contingency plan section.

Section 5: Implementation of the Contingency Plan--

There are no strict guidelines as to what criteria will be used to implement the contingency plan emergency actions. A firm set of criteria

should be defined to aid in determining when the emergency procedures will be enforced.

The phrase "offsite release" should be defined. It is unclear whether this phrase refers to the facility property boundaries or the bermed containment area surrounding each hazardous waste treatment or storage unit.

Section 6: Emergency Response Procedures--

Spills--The emergency coordinator should be notified of all spills, including small, contained spills. It is the emergency coordinator's responsibility to evaluate the extent and potential hazard of each and every spill.

6.2.2 Emergency Response Notification--The statement "...difficult to determine whether or not a spill should be reported to the authorities" implies that some spills will either go unreported or that there may be a significant time lag between the spill event and notification to the authorities. All spills that are potentially hazardous to human health and the environment must be reported immediately. Because no provisions are made for an outside agency to be involved with deciding whether a spill should be formally reported, well-defined criteria are required to determine whether a spill needs to be reported. This section of the contingency plan implies that Chempro's regulatory affairs officials have the ultimate decision of whether a spill is to be reported and that the emergency coordinator may not always make this decision.

6.3 Containment and Control--The specific responsibilities of Crowley Environmental Services are not defined in the contingency plan. If this firm has been subcontracted by Chempro for emergency response, the plan should state this fact.

6.3.2 Spills in Load and Unloading Areas, 6.3.3 Ruptured and Leaking Tanks, 6.3.4 Ruptured Lines--In the event of a spill, rupture, or leak at the facility, the spilled material must be pumped to an appropriate tank.

Chempro has not identified an individual that will be authorized to decide which tank will be used in the event of a spill, rupture, or leak. It is assumed that the emergency coordinator will make this decision. However, this requirement needs to be clarified in the plan.

Section 9: Evacuation--

Chempro has not identified the individual who is responsible for determining whether the predetermined evacuation assembly area is upwind of a spill or emergency event. It is possible that during an emergency the emergency coordinator will be occupied with the various response teams. Therefore, an alternate person should be designated to monitor the wind direction with respect to the evacuation assembly area. Also, this person should be given the authority to change the evacuation assembly area if that area is no longer safe. A method to notify all onsite personnel as to the change in evacuation assembly area should be included into the contingency plan.

## WASTE ANALYSIS PLAN REVIEW

### Applicable Regulations

A waste analysis plan has been submitted by Chempro for review. The regulations for general waste analysis plan format and content are set forth under 40 CFR Part 265.13, Subpart B. In addition to these general requirements, regulations for specific waste management units (e.g., tanks, landfills, surface impoundments) are provided in 40 CFR Part 265, Subparts I through Q. The Chempro Pier 91 waste treatment and storage operations involve only tanks. Therefore, the applicable management-specific regulations are provided under 40 CFR 265.190 through 265.199 (Subpart J).

### Regulatory Comments

Chempro's waste analysis plan (WAP) generally complies with all of the RCRA requirements specified under 40 CFR Part 265. Tetra Tech performed the

waste analysis plan review using the checklist (Appendix B) provided by U.S. EPA Region X. Several minor omissions were detected. The inclusion of these elements into the current WAP will bring the plan into compliance. A brief description of each of these regulatory omissions is presented below.

Process Tolerance Limits--

There are no specified pretreatments used to meet the defined analytical tolerance limits. The identification of these pretreatments is not specifically required under 40 CFR 265.13. However, the definition of the pretreatment procedures would aid in evaluating the waste analysis plan, and is recommended by RCRA guidelines.

Waste Sampling, Analysis, and Quality Assurance/Quality Control (QA/QC) Procedures--

Section d.--The waste analysis plan does not include a QA/QC program for waste sampling and analysis. Chempro samples all wastes prior to accepting it at their Pier 91 facility. Therefore, a well-defined QA/QC program needs to be implemented and described in the waste analysis plan.

Section e.--The QA/QC program does not include, or specify, performance evaluations for trained sampling and analysis personnel. This information should be included in the waste analysis plan.

Section h.--A procedure to verify laboratory equipment inspection, maintenance, and service is not provided in the waste analysis plan. Any analytical equipment owned and operated at the Pier 91 facility for the purpose of determining waste characteristics must have routine maintenance and service. If applicable, this information should be provided in the waste analysis plan.

Technical Comments

The technical details of the waste analysis plan are well designed and should allow for the efficient management and tracking of wastes through the system. The initial screening process for incoming wastes appears to be adequate to identify and reject hazardous wastes that are incompatible with Chempro's treatment and recovery processes.

One inconsistency is noted in the waste analysis plan. In the facility description, the maximum operational capacity of the Pier 91 facility is listed as 3.5 million gal. However, in both the closure plan and contingency plan, the maximum capacity is given as 8.5 million gal. This inconsistency should be clarified.

## REFERENCES

Chemical Processors, Inc. 1986. Waste analysis plan Pier 91 facility. Chemical Processors, Inc. Seattle, WA. 20 pp.

Chemical Processors, Inc. 1987a. Closure plan Pier 91, Port of Seattle. Chemical Processors, Inc. Seattle, WA. 20 pp.

Chemical Processors, Inc. 1987b. Contingency plan Pier 91 facility. Chemical Processors, Inc. Seattle, WA. 25 pp.

ICF Corporation. 1987. RCRA guidance manual for subpart G closure and post-closure care standards and subpart H cost estimating requirements. OSWER Policy Directive #9476.00-5. Prepared for U.S. Environmental Protection Agency, Washington, DC. ICF Corporation.

U.S. Environmental Protection Agency. 1986. Protocol for evaluating interim status closure/post-closure plans. Contract No. 68-01-7038. A.T. Kearney, Inc. and Baker Engineers. U.S. EPA Office of Solid Waste, Washington, DC.

# APPENDIX A

# CLOSURE/POST-CLOSURE PLAN CHECKLIST

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| I. | GENERAL CLOSURE REQUIREMENTS | | Page # | |
| +A. | Partial and/or Final Closure | | | Plan is for final closure. Basis for closure activities are based on maximum inventory quantities and activities. |
| A-1. | Closure performance standards [§265.111] | Y | 1-20 | |
| A-2. | Contents of plan [§265.112(b)] | Y | 1-20 | |
| +A-2a. | Maximum inventory of wastes [§265.112(b)(3)] | Y | 6 | - does not specify rationale for limited analysis of rinsate |
| A-2b. | Removal/decontamination procedures [§265.112(b)(4)] | N | | - does not specify the fate of rinsate |
| A-2c. | Other activities during closure period [§265.112(b)(5)] | Y | 10-12, 15, 16 | |
| +A-2d. | Closure schedule for each unit/final closure [§265.112(b)(6) and (7)] | N | | See comments in text |
| +A-3. | Amendment of closure plan [§265.112(c)] | NA | | Final closure is not anticipated at this time |
| A-4. | Notification of partial and final closure [§265.112(d)] | N | | Specific reference to notification schedule is not given |
| A-5. | Closure activities performed prior to closure plan approval [§265.112(e)] | NA | | Facility is still in full operation |
| +B. | Time Allowed for Closure [§265.113] | Y | 9 | Schedule allows for 90 days closure plan |
| B-1. | Extension of closure timeframes [§265.113(a) and (b)] | NA | | Facility has not scheduled closing |
| B-2. | Timeframes for demonstrations for extensions [§275.113(c)] | NA | | Same as above |
| C. | Disposal or Decontamination of Equipment, Structures and Soils [§265.114] | Y | 15 | |
| +D. | Certification of Closure | N | | Only the cost of certification was presented |
| +E. | Survey Plat and Certification by Professional Land Surveyor [§265.116] | NA | | No disposal units |
| F. | Notices [§265.119] | | | |
| F-1. | Record of wastes [§265.119(a)] | NA | | No disposal units |
| F-2. | Notice in deed [§265.119(b)] | NA | | No disposal units |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| F-3. | Certification of notice [§265.119(b)(2)] | NA | | No disposal units |
| +G. | Closure Cost Estimate [§265.142] | Y | 8 | Estimate includes sale of treated oil |
| G-1. | Adjustments to closure cost estimates [§265.142(b)] | N | | Plan does not specify adjustments for inflation (annually) |
| G-2. | Revisions to closure cost estimates [§265.142(c)] | NA | | No plans to modify closure plan at this time |
| H. | Financial Assurance for Closure [§265.143] | N | | No financial assurance is presented in the plan |
| I. | Liability Coverage [§265.147] | N | | No liability information is provided in the plan |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| II. | **GENERAL POST-CLOSURE REQUIREMENTS** | | | |
| A. | Post-closure Care and Use of Property [§265.117] | | | Facility plans a clean-closure. Therefore submittal of a post-closure care plan is not required. |
| +A-1. | Length of post-closure period specified [§265.117(a)(1)] | NA | | |
| +A-2. | Increasing/decreasing length of post-closure period [§§265.117(a)(2), 265.118(g)] | NA | | |
| A-3. | Security requirements [§265.117(b)] | NA | | |
| A-4. | Property use restrictions [§265.117(c)] | NA | | |
| B. | Submittal of Post-closure Plan [§265.118(a)] | NA | | |
| C. | Availability of Post-closure Plan | NA | | |
| D. | Content of Post-closure Plan [§§265.117(a)(1), 265.118(c)] | | | |
| D-1. | Monitoring activities described [§265.118(c)(1)] | NA | | |
| D-2. | Maintenance activities described [§265.118(c)(2)] | NA | | |
| D-3. | Post-closure contact identified [§265.118(c)(3)] | NA | | |
| +E. | Amendment of Post-closure Plan [§265.118(d) and (g)] | NA | | |
| +F. | Post-closure Notices [§265.119] | | | |
| F-1. | Notice to local zoning authority/record of wastes [§265.119(a)] | NA | | |
| F-2. | Notice in deed [§265.119(b)(1)] | NA | | |
| F-3. | Certification of notice [§265.119(b)(2)] | NA | | |
| F-4. | Removal of wastes from a closed landfill [§265.119(c)] | NA | | |
| +G. | Certifications of Completion of Post-closure Care [§265.120] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| +H. | Post-closure Care Cost Estimate [§265.144] | NA | | |
| H-1. | Adjustments to post-closure care cost estimates [§265.144(b)] | NA | | |
| +H-2. | Revisions to post-closure care cost estimates [§265.144(c)] | NA | | |
| I. | Financial Assurance for Post-closure Care [§265.145] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| III. | **CLOSURE OF CONTAINER STORAGE AREAS** | | | The facility description does not describe any container storage areas. The closure plan does not state whether waste sludge is stored on-site prior to removal to landfill. |
| A. | Contents of Plan [§264.112(b)] | | | |
| A-1. | Description of how each unit will be closed [§265.112(b)(1)] | NA | | |
| A-2. | Description of how final closure will be conducted [§265.112(b)(2)] | NA | | |
| A-3. | Identification of the maximum extent of operation [§265.112(b)(2)] | NA | | |
| A-4. | Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | NA | | |
| A-5. | Detailed description of removal of waste inventory [§265.112(b)(3)] | NA | | |
| A-6. | Detailed description of removal of waste residues [§§265.112(b)(4), 265.114] | NA | | |
| A-7. | Detailed description of other necessary activities [§265.112(b)(5)] | NA | | |
| A-8. | Schedule for closure of each unit [§265.112(b)(6)] | NA | | |
| A-9. | Estimate of expected year of final closure [§265.112(b)(7)] | NA | | |
| B. | Decontamination Procedures [§§265.112(b)(4), 265.114] | | | |
| +B-1. | Procedures for cleaning equipment and removing contaminated soils [§265.112(b)(4)] | NA | | |
| +B-2. | Management of generated wastes [§265.114] | NA | | |
| +B-3. | Methods for sampling and testing to demonstrate success of decontamination [§265.112(b)(4)] | NA | | |
| B-4. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| IV. | **CLOSURE OF TANKS** | | | |
| A. | Contents of Plan [§264.112(b)] | | | |
| A-1. | Description of how each unit will be closed [§265.112(b)(1)] | N | | Plan does not specify closure of individual tanks |
| A-2. | Description of how final closure will be conducted [§265.112(b)(2)] | Y | 9 | |
| A-3. | Identification of the maximum extent of operation [§265.112(b)(2)] | Y | 6, 7 | Basis for closure estimates |
| A-4. | Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | Y | 6, 7 | Same as above |
| A-5. | Detailed description of removal of waste inventory [§§265.112(b)(3), 265.197] | Y | 2-4 | |
| +A-6. | Detailed description of removal of waste residues [§§265.112(b)(4), 265.114, 265.197] | N | | See comments in text |
| A-7. | Detailed description of other necessary activities [§265.112(b)(5)] | Y | 10-12, 15, 16 | |
| A-8. | Schedule for closure of each unit [§265.112(b)(6)] | N | | The various treatment and storage units are not discussed separately |
| A-9. | Estimate of expected year of final closure [§265.112(b)(7)] | NA | | Facility has not notified intent of closure |
| +B. | Decontamination Procedures [§§265.112(b)(4), 265.114, 265.197] | | | |
| B-1. | Procedures for cleaning equipment and removing contaminated soils [§§265.112(b)(4), 265.197] | Y | 15, 16 | |
| B-2. | Management of generated wastes [§§265.114, 265.197] | N | | Plans do not address centrifuge and appurtenant equipment |
| +B-3. | Methods for sampling and testing to demonstrate success of decontamination [§§265.112(b)(4), 265.197] | N | | - No analytical method definition<br>- No description of sampling methods of tanks or pipes |
| B-4. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | N | | Specific criteria not provided in plan |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| V. | **CLOSURE OF SURFACE IMPOUNDMENTS** | | | |
| A. | Closure by Waste Removal [§265.228] | | | The facility does not own/operate a landfill unit at the Pier 91 site. |
| A-1. | Contents of closure plan [§264.112(b)] | NA | | |
| A-1a. | Description of how each unit will be closed [§265.112(b)(1)] | NA | | |
| A-1b. | Description of how final closure will be conducted [§265.112(b)(2)] | NA | | |
| A-1c. | Identification of the maximum extent of operation [§265.112(b)(2)] | NA | | |
| A-1d. | Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | NA | | |
| +A-1e. | Detailed description of removal of waste inventory [§§265.112(b)(3), 265.228(a)] | NA | | |
| +A-1f. | Detailed description of removal of waste residues [§§265.112(b)(4), 265.228(a)] | NA | | |
| A-1g. | Detailed description of other necessary activities [§265.112(b)(5)] | NA | | |
| A-1h. | Schedule for closure of each unit [§265.112(b)(6)] | NA | | |
| A-1i | Estimate of expected year of final closure [§265.112(b)(7)] | NA | | |
| A-2. | Decontamination procedures [§§265.112(b)(4), 265.228] | | | |
| A-2a. | Procedures for cleaning equipment and removing contaminated soils [§§265.112(b)(4), 265.228(a)] | NA | | |
| A-2b. | Management of generated wastes [§§265.114, 265.228(b)] | NA | | |
| +A-2c. | Methods for sampling and testing to demonstrate success of decontamination [§§265.112(b)(4), 265.228(b)] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| A-2d. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | NA | | |
| +B. | Closure as a Landfill* [§§265.228(c), 265.310] | NA | | |
| C. | Post-closure Care* [§§265.118(a), 265.310] | NA | | |

*Note: See Section VIII (Closure of Landfills) for the facilities that must meet the requirements of items B and C.

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|
| **VI. CLOSURE OF WASTE PILES** | | | |
| A. Closure by Waste Removal [§265.228] | | | The facility does not own/operate of waste pile unit at the Pier 91 site. |
| A-1. Contents of closure plan [§264.112(b)] | NA | | |
| A-1a. Description of how each unit will be closed [§265.112(b)(1)] | NA | | |
| A-1b. Description of how final closure will be conducted [§265.112(b)(2)] | NA | | |
| A-1c. Identification of the maximum extent of operation [§265.112(b)(2)] | NA | | |
| A-1d. Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | NA | | |
| A-1e. Detailed description of removal of waste inventory [§§265.112(b)(3), 265.258(a)] | NA | | |
| +A-1f. Detailed description of removal of waste residues [§§265.112(b)(4), 265.258(a)] | NA | | |
| A-1g. Detailed description of other necessary activities [§265.112(b)(5)] | NA | | |
| A-1h. Schedule for closure of each unit [§265.112(b)(6)] | NA | | |
| A-1i Estimate of expected year of final closure [§265.112(b)(7)] | NA | | |
| A-2. Decontamination procedures [§§265.112(b)(4), 265.228] | | | |
| +A-2a. Procedures for cleaning equipment and removing contaminated soils [§§265.112(b)(4), 265.258(a)] | NA | | |
| A-2b. Management of generated wastes [§§265.114, 265.258(b)] | NA | | |
| +A-2c. Methods for sampling and testing to demonstrate success of decontamination [§§265.112(b)(4), 265.258(b)] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| A-2d. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | NA | | |
| +B. | Closure as a Landfill* [§§265.258(b), 265.310] | NA | | |
| C. | Post-closure Care* [§§265.118(a), 265.310] | NA | | |

*Note: See Section VIII (Closure of Landfills) for the facilities that must meet the requirements of items B and C.

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| VII. | **CLOSURE OF LAND TREATMENT UNITS** | | | |
| A. | Contents of Plan [§264.112(b)] | | | The facility does not own/operate a land treatment unit at the Pier 91 site. |
| A-1. | Description of how each unit will be closed [§265.112(b)(1)] | NA | | |
| A-2. | Description of how final closure will be conducted [§265.112(b)(2)] | NA | | |
| A-3. | Identification of the maximum extent of operation [§265.112(b)(2)] | NA | | |
| A-4. | Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | NA | | |
| A-5. | Detailed description of removal of waste inventory [§265.112(b)(3)] | NA | | |
| A-6. | Detailed description of removal of waste residues [§§265.112(b)(4), 265.114] | NA | | |
| A-7. | Detailed description of other necessary activities [§265.112(b)(5)] | NA | | |
| A-8. | Schedule for closure of each unit [§265.112(b)(6)] | NA | | |
| A-9. | Estimate of expected year of final closure [§265.112(b)(7)] | NA | | |
| B. | Decontamination Procedures [§§265.112(b)(4), 265.114] | | | |
| B-1. | Procedures for cleaning equipment and removing contaminated soils [§265.112(b)(4)] | NA | | |
| B-2. | Management of generated wastes [§265.114] | NA | | |
| B-3. | Methods for sampling and testing to demonstrate success of decontamination [§265.112(b)(4)] | NA | | |
| B-4. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| C. | Objectives of the closure plan [§265.280(a)] | | | |
| +C-1. | Control of migration of hazardous constituents to groundwater [§265.280(a)(1)] | NA | | |
| +C-2. | Control of release of contaminated runoff to surface water [§265.280(a)(2)] | NA | | |
| +C-3. | Control of release of airborne particulates [§265.280(a)(3)] | NA | | |
| +C-4. | Compliance with food-chain crop restrictions [§265.280(a)(4)] | NA | | |
| D. | Factors to be considered in addressing the closure and post-closure care objectives [§265.280(b)] | | | |
| D-1. | Type and amount of hazardous waste/ constituents applied to unit [§265.280(b)(1)] | NA | | |
| D-2. | Mobility and expected rate of migration of hazardous constituents [§265.280(b)(2)] | NA | | |
| D-3. | Site location, topography and surrounding land use [§265.280(b)(3)] | NA | | |
| D-4. | Climate [§265.280(b)(4)] | NA | | |
| D-5. | Site geology and hydrogeology [§265.280(b)(5)] | NA | | |
| D-6. | Unsaturated zone monitoring information [§265.280(b)(6)] | NA | | |
| D-7. | Comparison of hazardous constituents levels on-site vs. background by type, concentration, and depth of migration [§265.280(b)(7)] | NA | | |
| E. | Methods to be Considered in Addressing the Closure and Post-closure Care Objectives [§265.280(c)] | | | |
| +E-1. | Removal of contaminated soils [§265.280(c)(1)] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| +E-2. | Placement of final cover considering certain factors [§265.280(c)(2)] | NA | | |
| E-2a. | Functions of the cover [§265.280(c)(2)(i)] | NA | | |
| E-2b. | Characteristics of the cover [§265.280(c)(2)(ii)] | NA | | |
| E-3. | Groundwater monitoring [§265.280(c)(3)] | NA | | |
| F. | Additional Requirements for Land Treatment Units During the Closure Period [§265.280(d)] | | | |
| +F-1. | Continue unsaturated zone monitoring [§265.280(d)(1)] | NA | | |
| F-2. | Maintenance of run-on control system [§265.280(d)(2)] | NA | | |
| +F-3. | Maintenance of runoff management systems [§265.280(d)(3)] | NA | | |
| F-4. | Control of particulate releases [§265.280(d)(4)] | NA | | |
| G. | Certifications of Closure [§265.280(e)] | NA | | |
| H. | Requirements for Land Treatment Units During the Post-closure Care Period [§265.280(f)] | | | |
| +H-1. | Continuation of soil-core monitoring [§265.280(f)(1)] | NA | | |
| +H-2. | Maintenance of access restrictions [§265.280(f)(2)] | NA | | |
| +H-3. | Compliance with food-chain crop restrictions [§265.280(f)(3)] | NA | | |
| H-4. | Control of particulate releases [§265.280(f)(4)] | NA | | |
| +H-5. | Inspection and maintenance procedures [§265.118(c)] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| VIII. | CLOSURE OF LANDFILLS | | | |
| A. | Contents of Plan [§§§265.112(b), 265.310] | | | The facility does not own/operate a landfill unit at the Pier 91 site. |
| A-1. | Description of how each unit will be closed [§265.112(b)(1)] | NA | | |
| A-2. | Description of how final closure will be conducted [§265.112(b)(2)] | NA | | |
| A-3. | Identification of the maximum extent of operation [§265.112(b)(2)] | NA | | |
| A-4. | Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | NA | | |
| A-5. | Detailed description of removal of waste inventory [§265.112(b)(3)] | NA | | |
| A-6. | Detailed description of removal of waste residues [§§265.112(b)(4), 265.114] | NA | | |
| A-7. | Detailed description of other necessary activities [§265.112(b)(5)] | NA | | |
| A-8. | Schedule for closure of each unit [§265.112(b)(6)] | NA | | |
| A-9. | Estimate of expected year of final closure [§265.112(b)(7)] | NA | | |
| B. | Decontamination Procedures [§§265.112(b)(4), 265.114, 265.310] | | | |
| B-1. | Procedures for cleaning equipment and removing contaminated soils [§265.112(b)(4)] | NA | | |
| B-2. | Management of generated wastes [§265.114] | NA | | |
| B-3. | Methods for sampling and testing to demonstrate success of decontamination [§265.112(b)(4)] | NA | | |
| B-4. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| +C. | Final Cover Design and Construction [§265.310(a)] | | | |
| C-1. | Minimization of liquid migration [§265.310(a)(1)] | NA | | |
| C-2. | Function with minimum maintenance [§265.310(a)(2)] | NA | | |
| C-3. | Promotion of drainage and minimization of erosion or abrasion [§265.310(a)(3)] | NA | | |
| C-4. | Accommodate settling and subsidence [§265.310(a)(4)] | NA | | |
| C-5. | Permeability standard [§265.310(a)(5)] | NA | | |
| +D. | Post-closure Care Requirements [§265.310(b)] | | | |
| D-1. | Inspection and maintenance of the final cover [§265.310(b)(1)] | NA | | |
| D-2. | Inspection and maintenance of the ground-water monitoring system [§265.310(b)(2)] | NA | | |
| D-3. | Run-on and runoff control structures [§265.310(b)(3)] | NA | | |
| D-4. | Maintenance of surveyed benchmarks [§265.310(b)(4)] | NA | | |
| D-5. | Gas ventilation system, if applicable [§265.310(b)(1] | NA | | |
| E. | Groundwater Monitoring Program | | | |
| +E-1. | Monitoring system [§265.91] | NA | | |
| E-1a. | Monitoring well locations [§265.91(a) and (b)] | NA | | |
| E-1b. | Monitoring well construction [§265.91(c) | NA | | |
| E-2. | Sampling and analysis [§265.92] | NA | | |
| +E-2a. | Sampling plan [§265.92(a)] | NA | | |
| E-2b. | Analytical parameters [§265.92(b)] | NA | | |

Facility Name Chem. Pro, Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|
| E-2c. Establishment of background values [§265.92(c)] | NA | | |
| E-2d. Annual and semiannual determinations [§265.92(d)] | NA | | |
| E-2e. Groundwater levels [§265.92(e)] | NA | | |
| E-3. Preparation, evaluation, and response [§265.93] | NA | | |
| E-3a. Groundwater quality assessment program [§265.93(a)] | NA | | |
| +E-3b. Statistical comparisons [§265.93(b)] | NA | | |
| E-3c. Reporting and confirmation sampling [§265.93(c)] | NA | | |
| E-3d. Detailed assessment program [§265.93(d)] | | | |
| o assessment plan [§265.93(d)(2) and (3)] | NA | | |
| o implementation [§265.93(d)(4) and (5)] | NA | | |
| o reinstate indicator evaluation program [§265.93(d)(6)] | NA | | |
| o cessation of assessment program [§265.93(d)(7)] | NA | | |
| E-3e. Modification of monitoring system [§265.93(e)] | NA | | |
| E-4. Required records and reporting [§265.94] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| IX. | **CLOSURE OF INCINERATORS** | | | |
| A. | Contents of Plan [§264.112(b)] | | | The facility does not own/operate a hazardous waste incinerator at the Pier 91 site. |
| A-1. | Description of how each unit will be closed [§265.112(b)(1)] | NA | | |
| A-2. | Description of how final closure will be conducted [§265.112(b)(2)] | NA | | |
| A-3. | Identification of the maximum extent of operation [§265.112(b)(2)] | NA | | |
| A-4. | Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | NA | | |
| A-5. | Detailed description of removal of waste inventory [§§265.112(b)(3), 265.351] | NA | | |
| +A-6. | Detailed description of removal of waste residues [§§265.112(b)(4), 265.114, 265.351] | NA | | |
| A-7. | Detailed description of other necessary activities [§265.112(b)(5)] | NA | | |
| A-8. | Schedule for closure of each unit [§265.112(b)(6)] | NA | | |
| A-9. | Estimate of expected year of final closure [§265.112(b)(7)] | NA | | |
| B. | Decontamination Procedures [§§265.112(b)(4), 265.114] | | | |
| +B-1. | Procedures for cleaning equipment and removing contaminated soils [§§265.112(b)(4), 265.351] | NA | | |
| B-2. | Management of generated wastes [§§265.114 265.351] | NA | | |
| +B-3. | Methods for sampling and testing to demonstrate success of decontamination [§§265.112(b)(4), 265.351] | NA | | |
| B-4. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | NA | | |

Facility Name Chem. Pro, Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| X. | **CLOSURE OF THERMAL TREATMENT UNITS** | | | Thermal treatment was performed within the storage and process tanks. Therefore, the closure requirements are specified and evaluated in the section regarding tanks. |
| A. | Contents of Plan [§264.112(b)] | | | |
| A-1. | Description of how each unit will be closed [§265.112(b)(1)] | NA | | |
| A-2. | Description of how final closure will be conducted [§265.112(b)(2)] | NA | | |
| A-3. | Identification of the maximum extent of operation [§265.112(b)(2)] | NA | | |
| A-4. | Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | NA | | |
| A-5. | Detailed description of removal of waste inventory [§§265.112(b)(3), 265.381] | NA | | |
| +A-6. | Detailed description of removal of waste residues [§§265.112(b)(4), 265.114, 265.381] | NA | | |
| A-7. | Detailed description of other necessary activities [§265.112(b)(5)] | NA | | |
| A-8. | Schedule for closure of each unit [§265.112(b)(6)] | NA | | |
| A-9. | Estimate of expected year of final closure [§265.112(b)(7)] | NA | | |
| B. | Decontamination Procedures [§§265.112(b)(4), 265.114, 265.381] | | | |
| +B-1. | Procedures for cleaning equipment and removing contaminated soils [§§265.112(b)(4), 265.381] | NA | | |
| B-2. | Management of generated wastes [§§265.114, 265.381] | NA | | |
| +B-3. | Methods for sampling and testing to demonstrate success of decontamination [§§265.112(b)(4), 265.381] | NA | | |
| B-4. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | NA | | |

Facility Name Chem. Pro. Pier 91
ID No. WAD 000812917

## INTERIM STATUS (40 CFR PART 265) CLOSURE/POST-CLOSURE PLANS

| | | Provided (Y/N) or NA | Location | Comments |
|---|---|---|---|---|
| XI. | **CLOSURE OF CHEMICAL, PHYSICAL, AND BIOLOGICAL TREATMENT UNITS** | | | Chemical and physical treatment was performed within storage and process tanks. Therefore the closure requirements are specified and evaluated in the section regarding tanks. |
| A. | Contents of Plan [§264.112(b)] | | | |
| A-1. | Description of how each unit will be closed [§265.112(b)(1)] | NA | | |
| A-2. | Description of how final closure will be conducted [§265.112(b)(2)] | NA | | |
| A-3. | Identification of the maximum extent of operation [§265.112(b)(2)] | NA | | |
| A-4. | Estimate of the maximum inventory of hazardous wastes [§265.112(b)(3)] | NA | | |
| A-5. | Detailed description of removal of waste inventory [§§265.112(b)(3), 265.404] | NA | | |
| A-6. | Detailed description of removal of waste residues [§§265.112(b)(4), 265.114, 265.404] | NA | | |
| A-7. | Detailed description of other necessary activities [§265.112(b)(5)] | NA | | |
| A-8. | Schedule for closure of each unit [§265.112(b)(6)] | NA | | |
| A-9. | Estimate of expected year of final closure [§265.112(b)(7)] | NA | | |
| B. | Decontamination Procedures [§§265.112(b)(4), 265.114, 265.404] | | | |
| B-1. | Procedures for cleaning equipment and removing contaminated soils [§§265.112(b)(4), 265.404] | NA | | |
| B-2. | Management of generated wastes [§§265.114, 265.404] | NA | | |
| B-3. | Methods for sampling and testing to demonstrate success of decontamination [§§265.112(b)(4), 265.404] | NA | | |
| B-4. | Criteria for determining the extent of decontamination necessary [§265.112(b)(4)] | NA | | |

# APPENDIX B

# WASTE ANALYSIS PLAN CHECKLIST

TABLE 4-1. WASTE ANALYSIS PLAN CHECKLIST - GENERAL INFORMATION

I. FACILTIY DESCRIPTION[1]

a. Are all hazardous waste management processes identified? X yes ___ no
b. Is sufficient information provided for each process to confirm that the wastes can be properly managed at the facility? - X yes ___ no

II. IDENTIFICATION OF WASTES TO BE MANAGED[1]

a. Is there a list of wastes or description of waste types to be permitted for each process? X yes ___ no
b. Are the properties of the wastes that are pertinent to the process provided? X yes ___ no
   - Physical properties, physical state, chemical properties
   - Ignitability, reactivity, and/or incompatability
   - RCRA number and basis for RCRA hazard designation
   - Documented waste data from a source other than one's waste analyses, e.g., data from a similar process
c. Does the owner/operator identify any waste characteristic limitations? X yes ___ no
   - Boundary conditions of waste properties
   - Restricted wastes

III. PROCESS TOLERANCE LIMITS[1]

a. Does the plan address any process tolerance limits (e.g., the minimum Btu/lb of waste or waste mixture that can be incinerated to 99.99%)? X yes ___ no
b. Is any process pretreatment specified in order to meet tolerance limits? ___ yes X no

IV. WASTE PARAMETERS TO BE MONITORED

40 CFR 264.13 (b)(1)

a. Does the plan include parameters that are measured to characterize the waste? X yes ___ no
b. Are rationales provided for the parameters? X yes ___ no

40 CFR 264.13 (a)(3) and (b)(4)

c. Does the owner/operator address recharacterizing the waste? X yes ___ no
   - Potential for wastes restricted from the facility being included by mistake
   - Process design limitations
   - Variability of waste composition
   - Chemical/physical instability of the waste
   - Prior history of the generator's performance and reliability

d. Are there procedures in place should recharacterization prove a waste is unacceptable by the facility? X yes ___ no

40 CFR 264.13 (b)(3)

e. Are any wastes analyzed outside the facility? X yes ___ no
   - Documentation of analytical procedures and representative sampling

40 CFR 264.13 (c)

f. Does the plan include waste shipment screening procedures? X yes ___ no
   - Procedures to review shipment's manifest
   - Procedures to inspect shipment visually
   - Frequency and % of shipment inspected, sampled, and/or analyzed annually
   - Procedures when a shipment arrives that is unacceptable by the facility
   - Key parameters for shipment analysis of each waste or waste type

40 CFR 264.13 (a)(3)(i)

g. Are there procedures should the owner/operator be notified or suspicious that the waste generation process or operation has changed? X yes ___ no
   - Procedures to obtain information needed
   - Sampling and analysis procedures
   - Criteria to evaluate waste change information
   - Procedures for handling wastes proven unacceptable by the facility

V. WASTE SAMPLING, ANALYSIS, and QA/QC PROCEDURES

40 CFR 264.13 (b)(3)

a. Does the plan include representative waste sampling procedures? X yes ___ no
   - Sampling method number and reference
   - Sampling device
   - Description of any method not approved by EPA
   - Statistically representative sampling technique (simple, stratified, or systematic random sampling; composite or grab sampling; subsampling)
   - Practicality of statistically representative sampling (physical barriers, alternative methods) addressed
   - Number of sampling sites
   - Waste containment device when sampling
   - Physical state(s)/layers of waste

TABLE 4-1. (continued)

| | |
|---|---|
| . Precision and accuracy of sampling procedures<br>. Rationale for sampling strategy selected | |
| b. [2]Are any samples taken by nonfacility people?<br>. Certification/documentation of representative sampling procedures | X yes ___ no |
| 40 CFR 264.13 (b)(2) | |
| c. Is waste analysis information provided?<br>. SW-846 test method and number if EPA-approved<br>. Detailed description and reference of any method not EPA-approved | X yes ___ no |
| 40 CFR 270.30 (e) | |
| d. Does the plan include a QA/QC program for waste sampling and analysis?<br>. Goals of program<br>. Intended use and quantity of data to be gathered<br>. Acknowledgement that QA/QC will be followed as described in specific test methods in SW-846. | ___ yes X no |
| e. Does the program include the performance evaluation of trained sampling and analysis personnel?<br>. Frequency of evaluation and rationale<br>. Documentation of evaluation | ___ yes X no |
| f. Is there a sample chain of custody procedure?<br>. Container labeling and seals<br>. Field logbook<br>. Receipt and logging of samples by lab personnel<br>. Chain of custody records<br>. Sample analysis request sheet<br>. Method of containment and preservation<br>. Confirmation sheet of sample delivery to lab | X yes ___ no |
| g. Does the internal or commercial lab document the lab aspects of chain of custody?<br>. Numbering and documenting path of sample through labs<br>. Destiny of remaining sample after analysis<br>. Documentation and forwarding of test results to manager for filing | X yes ___ no |
| h. Is lab equipment inspected, maintained, and serviced periodically? | ___ yes X no |

[1]Inclusion of this information is recommended 1) to make the application easier to review, and 2) to allow the plan to stand alone for use as an operating document. This information is not required in a waste analysis plan by regulation; chemical and physical analyses of the waste (40 CFR 270.14 (b)(2)) may be referenced from another Section of Part B.
[2]Applies primarily to offsite facilities.

TABLE 4-2. WASTE ANALYSIS PLAN CHECKLIST - SPECIFIC HAZARDOUS WASTE MANAGEMENT PROCESS

CONTAINERS NA

Does the waste analysis plan include procedures for the following where appropriate:

1. Determining compatibility of a waste to a container (if not determined when containers were first selected)? ___yes___no

2. Determining compatibility of a waste to other wastes stored nearby in containers, piles, open tanks, or surface impoundments? ___yes___no

3. Determining compatibility of a waste to wastes previously held in reused containers that were not decontaminated? ___yes___no

4. Analyzing ignitable/reactive containerized wastes? ___yes___no

5. Analyzing liquids that are collected in a storage area? ___yes___no

TANKS

Does the waste analysis plan include procedures for the following where appropriate:

1. Determining compatibility of a waste to a tank (if not determined when tank was first selected)? X yes___no

TANKS (cont'd.)

2. Determining compatibility of a waste to any raw materials or other wastes potentially or previously held in the tank? X yes___no

3. Analyzing ignitable/reactive wastes managed in tanks? X yes___no

SURFACE IMPOUNDMENTS NA

Does the waste analysis plan include procedures for the following where appropriate:

1. Determining compatibility of a waste to the impoundment's materials of construction (if not determined when materials were first selected)? ___yes___no

2. Determining the compatibility of a waste to any raw materials or other wastes potentially held in the impoundment? ___yes___no

3. Procedures for analyzing ignitable/reactive wastes managed in impoundments? ___yes___no

WASTE PILES NA

Does the waste analysis plan include procedures for the following where appropriate:

1. Determining the compatibility of a waste to the pile's materials of construction (if not determined when materials were first selected)? ___yes___no

TABLE 4-2. (continued)

WASTE PILES (cont'd.)

2. Determining the compatibility of a waste to other wastes potentially held in the same pile, other piles, container, open tanks, or surface impoundments onsite? ___yes___no

3. Determining the compatibility of a waste to wastes previously held on the pile base if it was not decontaminated (unless it can be proven the wastes are the same)? ___yes___no

4. Analyzing ignitable/reactive wastes managed in waste piles? ___yes___no

5. a) Sampling and analyzing leachate collected beneath the pile, and b) managing the leachate if hazardous? ___yes___no

INCINERATION NA

Does the waste analysis plan include the following information:

1. Additional waste characteristic parameters required as a result of an EPA-approved trial burn:

- Heat value
- Viscosity (if applicable)
- Appendix VIII constituents
- POHCs[1] designated from Appendix VIII constituents? ___yes___no

INCINERATION (cont'd.)

2. Sampling and analysis procedures for item 1. parameters? ___yes___no

THERMAL TREATMENT NA

Does the waste analysis plan include the following information:

1. Additional waste characteristic parameters required:

- Heat value
- Halogen content and sulfur content
- Concentrations of mercury and lead, unless documented data show the elements aren't present? ___yes___no

2. Sampling and analysis procedures for these parameters? ___yes___no

PHYSICAL, CHEMICAL, AND BIOLOGICAL TREATMENT NA

Does the waste analysis plan include the following:

1. Any additional waste characteristic parameters required as a result of an EPA-approved trial test? ___yes___no

2. Sampling and analysis procedures for these specific parameters? ___yes___no

TABLE 4-2. (continued)

PHYSICAL, CHEMICAL, AND BIOLOGICAL TREATMENT (cont'd.)

3. Procedures to determine the compatibility of a waste to process structure (if not determined when structure was first selected)? ___yes___no

4. Procedures to determine the compatibility of a waste to any raw materials or other wastes potentially or previously held in the process structure? ___yes___no

5. Procedures for analyzing ignitable/reactive wastes managed in the process structure? ___yes___no

LAND TREATMENT

Does the waste analysis plan include the following:

1. Any additional waste characteristic parameters required as a result of an EPA-approved land treatment demonstration, e.g., Appendix VIII PHCs[2]? ___yes___no

2. Sampling and analysis procedures for Item 1. parameters? ___yes___no

3. Procedures to determine the compatibility of a waste to any raw materials or other wastes potentially applied in a given treatment zone? ___yes___no

4. Procedures for analyzing ignitable/reactive wastes to be treated? ___yes___no

LANDFILL NA

Does the waste analysis plan include procedures for the following where appropriate:

1. Inspecting containers for free liquids before disposal and for handling any unacceptable free liquids that may appear? ___yes___no

2. Inspecting containers for 90% volume by waste and for handling any containers of waste that are unacceptable by the facility that may appear? ___yes___no

3. Determining the compatibility of a waste to landfill liner(s) and leachate collection system materials (if not determined when materials were first selected)? ___yes___no

4. Determining the compatibility of a waste to any other wastes potentially disposed in the landfill? ___yes___no

5. Analyzing ignitable/reactive wastes to be disposed? ___yes___no

6. a) Sampling and analyzing leachate collected and b) managing the leachate if hazardous? ___yes___no

[1] POHC - Principal Organic Hazardous Constituent.
[2] PHC - Principal Hazardous Constituent.

TABLE 4-3. OPTIONAL ITEMS TO CONSIDER WHEN PREPARING A WASTE ANALYSIS PLAN[1]

I. IDENTIFICATION OF WASTES TO BE MANAGED

An identification number for a waste that may indicate its generation source

Known health and environmental effects

Any analytical data sheets on waste

Any existing documentation on the waste's compatibility or incompatibility

Certification of validity of any waste data provided by a generator

II. WASTE PARAMETERS TO BE MONITORED

Screening procedures[2]

- Reference to reviewing shipment manifests for information such as--
  - Manifest document number
  - Generator's name, address, and EPA I.D. number
  - Each transporter's name and EPA I.D. number
  - The destination of each shipment, i.e., HWMF, address, and EPA I.D. number
  - An alternative HWMF, address, and EPA I.D. number
  - DOT shipping name and number
  - Quantity/volume of waste in shipment

II. WASTE PARAMETERS TO BE MONITORED (cont'd.)

  - Number and type of containers
  - Signed certification and date

- Visual inspection of shipment
  - Number and type of containers match manifest
  - Shipment labels/placards/marks, i.e., RCRA and DOT, match manifest description
  - Presence of free liquids and consistency with manifest description
  - Irregularities with shipment, e.g., leaks
  - Wastes restricted from the facility that are visibly present
  - Waste color's consistency with the characterization form's description
  - Consistency between the waste's visible physical state and the characterization form's description
- Acceptance/rejection procedures
  - Documentation of acceptance when results of waste inspection and analysis agree with waste characterization data

TABLE 4-3. (continued)

| | |
|---|---|
| - Reanalysis procedures for a waste shipment when test results are inconsistent with characterization data<br><br>notifying generator of inconsistency<br><br>agreement to reject or reanalyze waste shipment (document)<br><br>analysis of an unused original sample's replicate or a new sample<br><br>notifying generator or waste acceptance or rejection<br><br>- Rejection procedures for an unacceptable waste<br><br>- Agreements with generator if a waste is unacceptable<br><br>- Temporary storage plans before unacceptable waste is shipped offsite for other management | . Weather constraints<br><br>. Storage instruction<br><br>. Sample life<br><br>Diagrams of sampling points<br><br>Detection limits of analytical method<br><br>Rationale for selecting a test method if more than one method is available |
| III. WASTE SAMPLING, ANALYSIS, AND QA/QC PROCEDURES<br><br>Comments on sampling<br><br>. Protective gear required<br><br>. Sample container | |

[1]This information is not required by 40 CFR 264.13; however, it may contribute to a more complete and useful waste analysis plan.

[2]Used primarily by offsite hazardous waste management facilities.